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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,337	09/08/2003	Makoto Miyamoto	117051	9193
25944	7590	03/02/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER ANGEBRANNDT, MARTIN J	
			ART UNIT	PAPER NUMBER
			1756	
DATE MAILED: 03/02/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,337

Applicant(s)

MIYAMOTO ET AL.

Examiner

Martin J. Angebrannt

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~ The MAILING DATE of this communication appears on the cover sheet with the correspondence address ~
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-9 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The response of the applicant has been read and given careful consideration. Responses to the arguments of the applicant were presented after the first rejection to which they are directed. The terminal disclaimer is sufficient to obviate the prior double patenting rejection

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al. '232.

Nakanishi et al. '232 in example 5 exemplifies a GeTeBiGa composition where on a GeTeBi ternary phase diagram the composition is Te 50.43%, Ge 44.72 % and Bi 4.86 %, which is bounded by B3,D3,D3,D5,C5 and B5 of the instant specification. This appears to be coated to a thickness of 90-100 nm using a sputtering process on a grooved polycarbonate substrate. (10/7-11/50). The use of thicknesses of 10-70 for the recording layer is disclosed. (5/25-34). Example 6a exemplifies a GeTeBiGa composition where on a GeTeBi ternary phase diagram the composition is Te 50.92%, Ge 41.66 % and Bi 7.42 %, which is bounded by B3,D3,D3,D5,C5 and B5 of the instant specification with thicknesses of 34 nm. The use of media where Z is 0.05, Y is 0.03-0.3 and X is 0.52-0.60 is taught. (4/15-34).

It would have been obvious to one skilled in the art to modify example 6a by using other thicknesses disclosed as useful, including 10-15 nm, with a reasonable expectation of forming a useful optical recording medium based upon this disclosure.

The attorney states that an experiment was made and provides results of this experiment. The format is improper and the data should be in a proper declaration form executed by the applicant, not merely signed by the attorney of record. Even if this data was presented, the scope of coverage sought is much broader than supported by the data, due to the presence of the various other layers in the experiment, which do not appear in the claims. Clearly, the dielectric layers would restrict the flow of heat, which the reflective layer would conduct heat away from the irradiated area and these effect would naturally affect the performance of the recording medium and would affect the range of optimum recording layer thickness. Further, the exposure conditions are also very specific to that medium. The rejection stands.

4. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al. '950, in view of Yamada et al. JP 63-225935 (patent 2574325).

Kojima et al. '950 teach an optical recording medium as sample 11-2 having a structure of a substrate, a reflective bilayer, a lower dielectric layer, the recording layer and a second dielectric layer, where the recording layer is 11 nm thick and has a composition of Te 51%, Ge 45 % and Bi 4 % formed by sputtering on a grooved polycarbonate substrate. (57/45-58/65). The track pitch is disclosed with respect to example 1 as 0.615 microns. (33/9). The general use of GeBiTe , GeSnBiTe, GeTeBiSb reversible phase change recording layers is disclosed. (8/38-48). The thickness of the recording layer is 15 nm or less to reduce the diffusion of heat (8/61-65).

Yamada et al. JP 63-225935 (patent 2574325) in the examples, such as example 3, describe PMMA substrate-coated with 80 nm ZnS, 100 nm of GeTeBi and 160 nm ZnS. The use of these is laser having powers of 6-12 mW at velocities of up to 20 m/sec is disclosed. (page

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6(lower left and right columns.). The polygon 3 set forth by points A-D in the table on page 7 embraces the compositions bounded by B2,D2,D2,D6,C8 and B7 or B3,D3,D3,D5,C5 and B5 of the instant specification. The use of any compositions within the disclosed polygons is described as forming satisfactory rewritable recording media. (abstract)

It would have been obvious to use compositions from within the polygon 3 set forth by points A-D in the table on page 7, including $\text{Te}_{50}\text{Ge}_{45}\text{Bi}_5$, as the composition in place of the $\text{Te}_{51}\text{Ge}_{45}\text{Bi}_4$, specifically used in example 11-2 of Kojima et al. '950 with a reasonable expectation of forming a useful optical recording medium based upon the disclosure that any composition within these polygons will form satisfactory rewritable recording media.

The applicant argues, that the single composition taught by Kojima et al. '950 is outside the polygon recited in the independent claims and therefore does not anticipate the claimed invention. The examiner agrees and now makes a rejection under obviousness including a second reference. The position of the examiner is that the one of ordinary skill in the art is lead to other GeTeBi compositions by the teachings of GeBiTe, GeSnBiTe, GeTeBiSb reversible phase change recording layers in column 8 of Kojima et al. '950 and in this particular rejection note the composition exemplified by Kojima et al. '950 is also within the polygon discussed, which raises the expectation of forming a useful reversible phase change recording medium through the combination of the references.

5. Claims 3-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al. '950, in view of Kimura et al. JP 62-209741 (patent 2592800).

Kimura et al. JP 62-209741 (patent 2592800) in Table 1, point D₂ exemplifies a GeTeBi composition where on a GeTeBi ternary phase diagram the composition is Te 50 %, Ge 30 %

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and Bi 20 %, which bounded by B2,D2,D2,D6,C8 and B7 of the instant specification .This appears to be coated to a thickness of 100 nm (example 1, page 4,left column) using a sputtering process at 1×10^{-5} Torr. The examiner notes that these are specifically disclosed as rewritable.

It would have been obvious to use compositions from within the polygon 3 set forth by points A₂-E₂ in the table on page 5, including Te₅₀Ge₃₀Bi₂₀, as the composition in place of the Te₅₁Ge₄₅Bi₄, specifically used in example 11-2 of Kojima et al. '950 with a reasonable expectation of forming a useful optical recording medium based upon the disclosure that any composition within the polygon will form satisfactory rewritable recording media.

6. Claims 1-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al. '950, in view of Kimura et al. JP 02-147288.

Kimura et al. JP 02-147288 in Table 1 (page 5) Sample E exemplifies a GeTeBiSn composition where on a GeTeBi ternary phase diagram the composition is Te 50.36%, Ge 44.55 % and Bi 5.1%, which bounded by B3,D3,D3,D5,C5 and B5 of the instant specification. This appears to be coated to a thickness of 100 nm (example 1, page 4,lower right column) using a sputtering process at 1×10^{-5} Torr. Sample L would be similar. If the applicant has English translation made, the examiner would appreciate a copy with the subsequent response.

It would have been obvious to use compositions from within the polygon 3 set forth by points A₂-E₂ in the table on page 5, including Te_{50.36}Ge_{44.55}Bi_{5.1}, as the composition in place of the Te₅₁Ge₄₅Bi₄, specifically used in example 11-2 of Kojima et al. '950 with a reasonable expectation of forming a useful optical recording medium based upon the disclosure that any composition within the polygons ABCDE or JKLM will form satisfactory rewritable recording media.

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7. Claims 1-6 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi et al. '232, in view of Kondo et al. '139.

Kondo et al. '139 teach phase change optical recording media with wobbled grooves This includes address information [0128,0136]. Useful optical recording media can use various phase change recording materials including those alloys composed of Te,Ge and Bi [0164].

It would have been obvious to one skilled in the art to modify either Kojima et al. '950 or Nakanishi et al. '232 by using wobbled grooves as taught by Kondo et al. '139 as providing address information with a reasonable expectation of success based upon the use of this with phase change recording media.

The rejection stands for the reasons above.

8. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al. '950, combined with Yamada et al. JP 63-225935 (patent 2574325) or Kimura et al. JP 02-147288, further in view of Kondo et al. '139

It would have been obvious to one skilled in the art to modify Kojima et al. '950, combined with either Yamada et al. JP 63-225935 (patent 2574325) or Kimura et al. JP 02-147288 by using wobbled grooves as taught by Kondo et al. '139 as providing address information with a reasonable expectation of success based upon the use of this with phase change recording media.

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-9 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-29 of copending Application No. 11/028586 (prepub 2005/0169159). This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: The claimed subject matter of the two applications overlap including recitation of specific GeTeBi compositions and thicknesses of the recording layer.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

11. Claims 1-9 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-13 of copending Application No. 11/097232 (prepub 2005/0227035). This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: The claimed subject matter of the two applications overlap including recitation of specific GeTeBi compositions and thicknesses of the recording layer.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

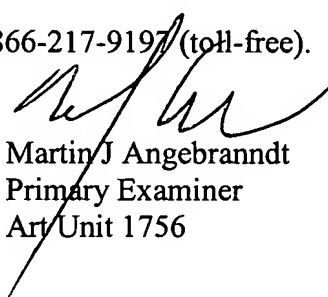
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angébrändt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J Angebrannndt
Primary Examiner
Art Unit 1756

02/27/2006